

Three national research chairs will advance innovative research

Folio Staff

Three Canada Research Chairs at the University of Alberta will explore innovative ways to change Canadians' experience with the justice system, ensure access to culturally appropriate health care, and engineer nanotechnology with applications from electronics to medicine.

The March 15 CRC appointments include one newly awarded chair and two renewed chairs for the U of A, worth a total of \$2.4 million.

Socio-legal researcher George Pavlich was appointed as a Tier 1 CRC in Social Theory, Culture and Law. Pavlich will study the notion of criminal accusation and how it captures people in the criminal justice system—a significant number of whom, he says, could be governed in other ways.

His research will focus on the historical role that accusations have played in identifying criminals, and how criminalized persons become targets for different punishments. He will explore the prospect of less exclusionary ways of dealing with much criminal behaviour, reserving incarceration for all but the most serious of instances.

"When policies, as a matter of course, evoke criminals and prisons in response to harmful social behaviour, they don't entertain other possible approaches," he said. "Through this research program, I wish to explore more inclusive ways of governing people that don't necessarily refer to notions of crime and punishment."

He adds, "one resounding promise of our criminal justice thinking was to reduce crime significantly, if not eliminate it—and certainly to rationalize punishment. I want to reinvigorate this unfulfilled promise."

Pavlich sees the awarding of the CRC as recognizing the value of

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New digs, same hard work



Pandas basketball player Jaime Norum, who has undergone three knee surgeries for a torn ACL, undergoes rehab with physical therapist Ian Hallworth March 19 prior to the grand opening of the Glen Sather Sports Medicine Clinic.

Campus connects at forum on budget challenges

Bryan Alary

The University of Alberta will remain among Canada's top universities despite ongoing fiscal challenges following a massive cut to post-secondary funding in the provincial budget, said acting provost Martin Ferguson-Pell.

The 7.2 per cent cut to post-secondary funding came as a "profound shock" when it was announced in the budget, he said, and in the days since, senior administration has started looking for ways to rethink how we do business—a conversation that will include all faculty, students and staff.

"This is a very, very difficult situation. I don't in any way want to underestimate the challenges that are before us," Ferguson-Pell told a standing-room-only audience at a March 13 campus forum set up specifically to discuss the budget challenges.

"We are one of the leading universities in Canada—we're in the top five—and we intend to stay there."

The budget reality includes a \$43-million cut to the U of A's Campus Alberta grant, on top of a structural deficit that previously existed due to expenses—largely driven by salaries and



Martin Ferguson-Pell addresses a standing-room-only audience March 13 at the Campus Forum to discuss budget challenges in the wake of post-secondary funding cuts.

benefits—rising, in some years, twice as fast as revenues. The fiscal gap is even wider when considering the U of A and all post-secondary institutions were promised a two per cent funding increase.

All told, the U of A faces a \$67-million operating deficit for 2013-14. The university has until May 31 to submit its Comprehensive Institutional Plan including budget to the province. However, the longer-term fiscal picture will take longer to resolve, said Phyllis Clark, vice-president of finance and administration.

"From what the provost has said, we will be able to get dispensation on some kind of a deficit. We would be lucky to have it over three years; I think more likely we will have it over two years. We have this problem we will have to confront."

Ferguson-Pell said senior administration, including President Indira Samarasekera, met with the deans March 10 to discuss future plans. They agreed to a 1.5 per cent across-the-board reallocation across all faculties and units, similar to recent years, and a three per cent reallocation from central administration.


Restrictions have also been imposed on travel, specifically travel expenses funded by


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Renowned virologist named Gairdner Award recipient

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Gift kicks off \$5M drive to help sexual minority youth

Folio Staff

When he dreams, Kris Wells sees Camp fYrefly across the country. The camps help sexual and gender minority youth become more resilient and better able to deal with the consequences of coming out. Now, thanks to a new campaign to raise \$5 million, the associate director of the Institute for Sexual Minority Studies and Services at the University of Alberta may no longer just be dreaming in rainbow colours.

The institute is already one step closer to its goal: the Stollery Charitable Foundation has committed \$500,000 to the campaign, boosting the total to date over a million dollars.

"The institute is doing groundbreaking, pioneering work that is changing attitudes and changing lives," says Doug Stollery of the Stollery Charitable Foundation. "I'm proud to support it and I encourage others to join us, to accelerate the pace of change in our society and increase the services the institute can provide to young people, and to the organizations they work with."

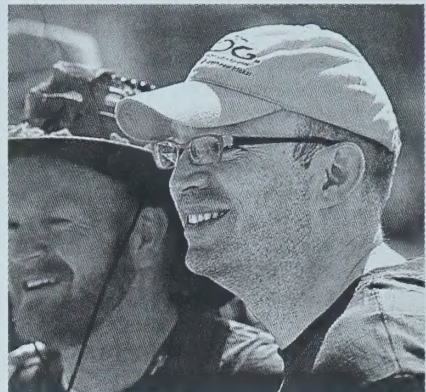
"As the province's flagship institution, the University of Alberta has a vision to conduct

research that translates into innovation that improves our world—including social innovation. iSMSS is helping build a more just and inclusive society for everyone," says President Indra Samarasekera. "Initiatives like iSMSS and its NoHomophobes.com project support the entire community by providing the evidence that leads to social change, with a direct impact on young lives."

2013 is the 10th anniversary of Camp fYrefly, which has helped more than 500 sexual and gender minority youth find the resiliency and skills they need to become future leaders. The research of iSMSS also influences policy direction and decisions, and actively supports families, schools and communities to positively address sexual orientation and gender identity issues.

"With more support, we could take our influence to a whole other level and reach across the country and the continent," said Wells. "This is research that has the potential to transform communities and change our society."

The campaign launched during the U of A's first-ever Pride Week, highlighted by the formation of its first Alumni Pride Chapter, which is dedicated to engage and network with LGBTQ



Kris Wells

and allied alumni who want to make a difference by connecting with the university and iSMSS.

As an incentive for future donors, every new donation of \$50,000 or more will see \$50,000 from the Stollery Charitable Foundation commitment directed to the iSMSS endowment in the new donor's name, until the \$500,000 level is reached. ■



The fundraising campaign for Camp fYrefly and iSMSS launched March 15 as part of the U of A's first-ever Pride Week.

CRCs will advance innovative research in social sciences, health, engineering

Continued from page 1

social science research in tackling key issues facing us today, and the quality of social science research conducted at the U of A. "With its strength in social, legal and cultural research, together with other CRCs working in related areas, the University of Alberta offers an exceptional environment to pursue the ideas of my proposed research program."

Gina Higginbottom was renewed as Tier 2 CRC in Ethnicity and Health for her work that focuses on health experiences and inequities of immigrant populations. She says her research is a perfect fit in Canada, which has used immigration as a population expansion policy, leading to a highly diverse multicultural society.

"Access to adequate and appropriate health care is a human right," said Higginbottom, an associate professor in the Faculty of Nursing. "We should all have the capacity to acquire health care that is appropriate to meet our needs and our ethnocultural orientation."

The daughter of a Ghanaian-born father and English mother, Higginbottom has both personal and professional interest in the subject. Her work as a CRC provides evidence of ethnocultural health



(From left) George Pavlich, Canada Research Chair in Social Theory, Culture and Law; Gina Higginbottom, Canada Research Chair in Ethnicity and Health; and Tian Tang, Canada Research Chair in Nano-biomolecular Hybrid Materials

inequities to shape health policy here and abroad.

"International migration is a 21st-century phenomenon," she said. "The movement and relocation of peoples is something that is not going to go away; it's going to increase."

The announcements also included the renewal of the U of A's Tier 2 Canada Research Chair in Nano-biomolecular Hybrid Materials, held by Tian Tang.

"I appreciate the faith the government and the university have placed in my theoretical research,"

said Tang, an associate professor of mechanical engineering. "Right from the beginning the U of A showed their support by nominating me for my first research chair when I was just hired at the university."

Tang and her six graduate students are modelling nanomaterials that could have future uses in electronics and biomedical treatments for diseases like cancer.

The team's modelling of carbon nanotube-DNA interaction could find its way to process carbon nanotubes for use in electronic devices, and their work on nano-sized

particles designed to deliver genetic materials into cells is part of a promising therapeutic technique called gene therapy.

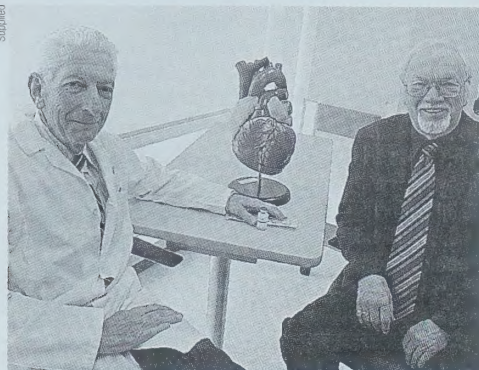
With today's announcement, the U of A now has 90 CRCs (45 Tier 1 and 45 Tier 2). Tier 1 chairs come with an award of \$1.4 million paid out over seven years; Tier 2 chairs are awarded \$500,000 over five years.

In 2000, the federal government created the CRC program to establish 2,000 research professorships in eligible degree-granting institutions across the country. ■

Clot-busters buy time for heart-attack victims

Raquel Maurier

An international study co-led by a University of Alberta researcher has found clot-busting drugs administered in the first three hours after a heart attack can buy patients valuable minutes until an angioplasty can be performed.



Paul Armstrong (left) is joined by Robert Harrison, who had a major heart attack two years ago and took part in the study.

"The challenge with angioplasty is it needs to be provided very quickly by an expert team in a facility that has such experts available 24 hours a day, seven days a week," says Paul Armstrong, a Distinguished University Professor in the Department of Medicine and a cardiologist with Alberta Health Services. "This is very difficult to achieve in many instances, and the resulting delay can lead to loss of valuable heart muscle and higher rates of death, shock and heart failure." With the drugs, the study shows heart-attack patients can delay their angioplasty by an average of 78 minutes.

Armstrong, who co-led the study with Frans Van de Werf of Belgium, says clot-busting drugs can be given by needle and administered in an ambulance, whereas angioplasty—which is a time-sensitive necessity regardless of drug administration—uses a catheter to mechanically open the blocked coronary artery causing the heart attack and must be administered in tertiary care hospitals by specialists trained in the field. Only three such facilities exist in Alberta.

"There are many health-care sites around the world that don't have the luxury of these specialized sites," he said. "And in many countries, it can be challenging for patients to get to such facilities within three hours—due to long travel distances, heavy traffic, poor weather and other factors."

This discovery will be helpful to patients who cannot get rapid access to angioplasty and will change the way doctors treat and care for heart-attack patients, Armstrong believes.

"Those who advocated the one-size-fits-all approach will be forced to rethink their proposition because we tested and delivered both treatments optimally in this study," he said. "This study shows health-care workers have two treatment options available, so they can use whichever is best—the right therapy for the right patient at the right time and the right place."

"It's also a wake-up call to health-care providers to pay attention to symptoms so patients are treated early, and it emphasizes that ambulance and pre-hospital care is a critical part of making sure the patient has the best outcome possible."

Armstrong says it is widely known that the longer the delay to treatment after the onset of heart-attack symptoms, the more severe the heart attack and the smaller the chance for the patient to survive.

Robert Harrison, 71, of Edmonton, took part in the study. He had a major heart attack two years ago on the Easter weekend. He received clot-busting drugs in the ambulance, followed by an angioplasty within three hours.

"Speaking with my cardiologist and family doctor, I think the clot-busting drugs saved my heart from having damage. I have no damage at all to my heart. I think my outcome would have been worse without the clot-busting drugs."

The international trial involved 99 centres in 15 countries and 92 Canadians, including 67 from the Edmonton region.

The study was funded by Boehringer Ingelheim. The findings were published in the peer-reviewed *New England Journal of Medicine* March 9 at the same time that Van de Werf presented the highlights at the American College of Cardiology conference. ■

U of A now offering farm fresh eggs

Michel Proulx

In an effort to preserve five heritage chicken breeds, the University of Alberta is selling farm fresh eggs from the five breeds to the general public.

For a fee of \$75, consumers can adopt a chicken and, in turn, pick up a dozen farm fresh eggs every other week from the Poultry Research Centre on the university's South Campus.

The free-run chickens are raised using strict bio-security farming practices and fed an all-natural diet.

"The benefits of the natural environment in which we raise our chickens are passed on to the eggs, which are of high quality and very nutritious," said Agnes Kulinski, business director of the Poultry Research Centre.

The program begins March 28 and will run for five months. A second, bigger program is expected to start later this year.

It's important to preserve the genetic material of the heritage breeds because they are the basis for today's commercial poultry. Poultry experts have expressed concern that these antique birds should be conserved in case they are required in the future.

To register or for more information, please contact Agnes Kulinski at 780-430-0319 or kulinski@ualberta.ca. ■



Light Sussex is one of five heritage chicken breeds at the U of A.

Useful budget ideas coming forth

Continued from page 1

operating dollars, a move that's expected to shave costs by 25 per cent. The restrictions do not affect travel related to revenue generation, such as student recruitment, "which will continue unaffected," Ferguson-Pell said.

During their meeting, the deans were challenged to look for new and innovative ways to find cost efficiencies and generate revenues, an exercise Ferguson-Pell said would include "trial balloon ideas" to find ways to cope with the budget crisis beyond this year. That exercise included looking at how a budget would differ if you removed 20 per cent in costs and replaced it with 10 per cent in additional revenue.

"This isn't to say that we're talking about 20 per cent cuts or anything like that, but what we're saying is we want to think about the big ideas in terms of how we would go forward so we can start to shape them into something that is going to create a strong academy."

During the question-and-answer part of the forum, Ferguson-Pell added that finding new ways to generate revenue, such as through professional development and continuing education courses, could help lessen the budgetary impact across the faculties.

Ferguson-Pell said the university recognizes that it cannot continue with across-the-board cuts indefinitely and that "vertical cuts" will be examined. He added that it's far too premature to define what that could look like.

"What we're saying is we're looking at ways where we could make reductions in our expenditures that would enable us to build on our strengths, to focus on our excellence, to focus on the things that are aligned with our strategic plan," he said.

"How you operationalize that at the program level or faculty level or course level is something we have not developed at the moment. That's something we need to be working on and discussing with you over the next few weeks."

Ferguson-Pell recognized consultation and fear about the budget crisis is not easy, but said he has been encouraged by the early response to the Change@UAlberta website and the constructive ideas put forth by the campus community.

"We all realize that this is going to have an impact on a lot of individuals in the university. I want you to be reassured that we are really focused on looking at the human dimension of this."

Ferguson-Pell also addressed fears of loss of academic freedom through a new mandate letter from the provincial government that's expected in late March. From conversations with the ministry, the idea behind the letter is not worrying, he said, and is anticipated to outline expectations of working with Campus Alberta and collaboration among institutions on strategic priorities.

Ferguson-Pell encouraged the campus community to engage with friends and neighbours in the coming weeks and months, and reinforce the importance of post-secondary education to Alberta's economic prosperity. Together, he said, we will navigate this "profound bump in the road."

"In terms of our overall vision, I think we are a very visionary university, we are a leading visionary university in Canada and we've got the right people to do it." ■

Research offers clue to how prion diseases spread

Raquel Maurier

Medical researchers at the University of Alberta have made a discovery that may explain how prion diseases, like chronic wasting disease and mad cow disease, adapt in order to spread between various types of animals.

The research team, led by neurologist Valerie Sim, discovered that a minuscule change in the prions' makeup appears to give the disease the ability to adapt—to mimic and recreate new strains with which it comes into contact. The team has been studying this area for two years.

"Prion diseases don't always successfully go from one animal to another, but when they do, the process is called adaptation. And we want to figure out what triggers that process to happen, what changes happen within prions to allow the disease to spread," says Sim, a researcher with the Faculty of Medicine & Dentistry, whose discovery was recently published in the peer-reviewed *Journal of Biological Chemistry*.

"One of the important things researchers in this field have realized is that if you pass certain strains of prion disease through a number of different hosts, the disease can adapt along the way and increase the number of susceptible hosts. That's the big concern right now."

"We want to determine why one prion disease might be able to spread from one type of animal to another and why another strain of the disease can't."

For instance, if a deer with chronic wasting disease is scavenged by another animal, could the prion disease cross into that intermediate host, evolve and then infect animals or species typically not at direct risk for the disease?

"We hope to understand how these bigger issues develop," says Sim. "We need to pay attention to chronic wasting disease in particular because it has the ability to spread in a different way than mad cow disease. Chronic wasting disease prions can be



Valerie Sim and her research team discovered that a minuscule change in prions' makeup appears to give prion diseases the ability to adapt and spread to different types of animals.

deposited into the soil and stay there for years, and could be eaten by another animal. How does it evolve from there?"

Sim and her team are continuing their research in this area and are seeing impressive results in the lab, reconfirming their findings through the testing of additional models.

Sim works in the Department of Medicine in the Division of Neurology. She is cross-appointed to the Centre for Neuroscience and the Centre for Prions and Protein Folding Diseases.

Her team's research was funded by Alberta Innovates – Health Solutions, PrioNet Canada and the Alberta Prion Research Institute.

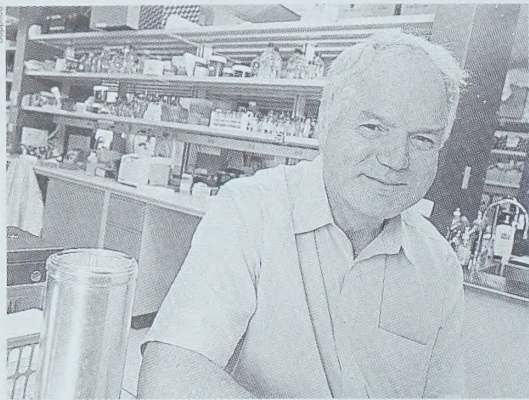
"Dr. Sim's achievements in prion research are of particular significance to Albertans," says Pamela Valentine, acting CEO of Alberta Innovates – Health Solutions. "She is truly a world-class researcher and we are delighted that our funding was instrumental in recruiting her back to Alberta nearly eight years ago." ■

World-renowned virologist named recipient of Gairdner Award

Folio Staff

A world-renowned virologist at the University of Alberta has been named a recipient of the Canada Gairdner International Award, one of the world's most prestigious international awards for biomedical science.

Michael Houghton, the Li Ka Shing Chair of Virology and Canada Excellence Research Chair in Virology at the U of A, was recognized for his "contributions to the discovery and isolation of the hepatitis C virus" according to the Gairdner Foundation, which announced the seven 2013 Gairdner Award recipients at a breakfast in Toronto on March 20.



Michael Houghton was named a recipient of the Canada Gairdner International Award in recognition of his research on hepatitis C.

Houghton worked with colleagues at the blood diagnostics company Chiron (now part of the pharmaceutical company Novartis) and the U.S. Centers for Disease Control and Prevention to first identify the hepatitis C virus in 1989. That initial breakthrough allowed him to develop new blood screening techniques that are now used worldwide to improve patient safety by keeping blood supplies free of the virus.

In February 2012, his team at the U of A showed that a vaccine developed from a single strain of the virus was effective against all known strains—a new breakthrough that shows a single hepatitis C vaccine is possible and could eventually help prevent thousands of Canadians and millions of people around the world from becoming infected each year. An estimated 170 million people worldwide are currently infected with the virus.

Houghton chose to decline the award for personal reasons. "I am honoured to have been named a recipient of the prestigious International Gairdner Award for my work on the hepatitis C virus," he said in a statement. "However, I felt that it would be unfair of me to accept this award without the inclusion of two colleagues, Dr. Qui-Lim Choo and Dr. George Kuo. The three of us worked closely together for almost seven years to discover this very elusive and challenging virus using a novel approach in the field of infectious disease. Together, we then went on to develop blood tests that protected the global blood supply, to identify new drug targets that led to the development of new potent therapeutics and to obtain the first evidence for a protective vaccine."

"I congratulate Dr. Harvey Alter and Dr. Daniel Bradley on receiving the International Gairdner Award who along with Dr. Qui-Lim Choo and Dr. George Kuo, have shared previous

"I am delighted that our combined work led to blood tests that prevented millions of people getting infected with this virus, that it is also leading to the development of potent new drugs to cure existing patients, and that vaccines are now on the horizon."

Michael Houghton

awards with me for our work on hepatitis C. Above all, I am delighted that our combined work led to blood tests that prevented millions of people getting infected with this virus, that it is also leading to the development of potent new drugs to cure existing patients, and that vaccines are now on the horizon.

"Finally, I would urge every baby boomer in Canada and in the USA to get tested for HCV as recommended by the CDC and the Canadian Liver Foundation since it is known that this age group experiences a high prevalence of infection and many individuals are unaware that they carry the virus, which ultimately can lead to serious liver disease if left untreated."

The Canada Gairdner International Awards are given annually to biomedical scientists who have made original contributions to medicine resulting in increased understanding of human biology and disease. Several researchers who have been named recipients have gone on to win the Nobel Prize in science or medicine.

Drama professor pickin' up good, good, good vocal vibrations

Geoff McMaster

David Ley is on the phone from Stratford, Ont., where he's been holding vibrators—yes, the sex toy variety—against the throats of some of the finest actors in the country to give them more vocal power.

"I've gone with what I've considered to be pretty wacky ideas to people in other departments and they say, 'That sounds odd, but I'm willing to go with you on this.'"

David Ley

The University of Alberta voice and dialect coach admits it's a bizarre technique sure to raise eyebrows, but it works "like magic," he says. Without exception, everyone who has tried Ley's recent innovation has reported improved projection and range.

"You can actually watch on a spectrograph how vocal energy grows," he says. "Even when you take the vibrator off, the frequencies are greater than when first applied."

"I've done this with singers, school-teachers and actors. It always works ... some people simply say, 'wow!'"

The idea is so simple that you might well ask why no one has thought of it before. One common therapy used in speech pathology involves massaging the larynx to loosen up tension, "but some people just can't handle that—the feeling of fingers on their throat," says Ley.

So in trying to come up with a solution for an actor who was losing her voice, he began casting about for a different approach. It struck him that drugstores sell vibrating devices to help release various forms of muscular tension, and that had him thinking, "Where can you go buy small hand-held vibrators?"

It hit him like a hot flash—the local love shop, of course.

There he found exactly what he was looking for—a vibrator with a frequency somewhere between 100 and 120 hertz, close enough to the range of the human voice. He pressed it against the actor's neck over the

vocal cords, and asked her to hum. The results were striking.

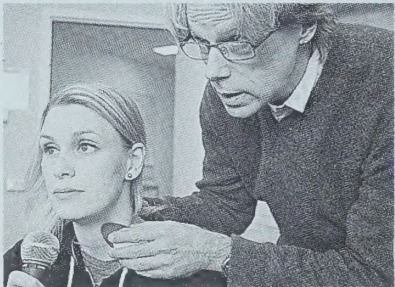
"Not only did it free tension in the laryngeal muscles, but it seemed to stimulate vibrations in the vocal folds," says Ley. He also found that applying the vibrator to the top of the head and cheeks increased certain overtones.

Ley then took his idea to a friend in speech pathology to explore its potential for helping relieve more serious cases of vocal stress.

"This is the great thing I've found about the university. I've gone with what I've considered to be pretty wacky ideas to people in other departments and they say, 'That sounds odd, but I'm willing to go with you on this.'"

Toronto actor Sara Farb was suffering from laryngitis in a recent Citadel production of *Next to Normal*—a high-octane, vocally demanding rock-and-roll musical—when she heard about Ley's discovery.

"It was just unbelievable," she said after meeting with him once to try out the therapy. "That night was my best performance—not just of that run, but in recent memory. It was like my voice had been polished and was completely brand new. It was so absent of



David Ley found that holding a vibrator to the vocal cords can dramatically improve projection and range.

stress, even though the show was a stressful one to do.

"I sent David a message that night saying he may have changed my life. I don't mean to be dramatic, but it was drastic. I will never forget that performance."

Ley says it's still early days for concrete scientific evidence, but he plans to publish the promising preliminary results soon. To begin disseminating his method he'll present at the Voice Foundation Symposium in Philadelphia early next June. He's also taken the idea to TEC Edmonton to begin the patenting process.

As for Farb, she says she ordered her own vibrator online before leaving Ley's office. "I will never go anywhere without that thing."

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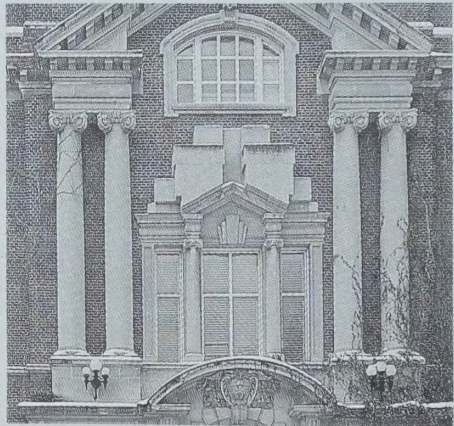
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The Edmonton Chamber of Commerce is a Not for Profit organization and is funded in large part by its members. A portion of every admission ticket sold will go to the endowment fund for children in need.

Are You a Winner?

Congratulations to George Kotovych who won a Butterdome butter dish as part of Folio's March 8 "Are You a Winner?" contest. Kotovych identified the location of last issue's photo as outside Convocation Hall in the hallway in the Old Arts building. Up for grabs this week is a copy of the award-winning *The Grads Are Playing Tonight!* by M. Ann Hall, U of A professor Emeritus in the Faculty of Physical Education and Recreation, courtesy of the University of Alberta Press. To win it, simply identify where the object pictured is located and email your answer to folio@ualberta.ca by noon on Tuesday, April 2, and you will be entered into the draw.

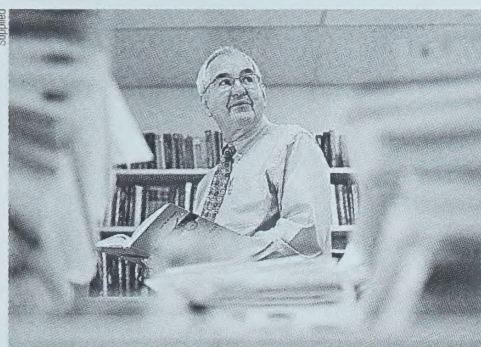


Chemistry pioneer shows researchers 'The Wasylishen Way'

Michael Brown

The only academic accomplishment more praiseworthy than Roderick Wasylishen's vast body of work in the field of nuclear magnetic resonance spectroscopy is his style of doing research.

Referred to endearingly as "The Wasylishen Way," his approach is described by one colleague as "marked by elegance, pursuit of fundamental questions and thoroughness ... an ideal example for the rest of the community of researchers."



Roderick Wasylishen is the recipient of a 2013 J. Gordin Kaplan Award.

This is high acclaim for a chemistry pioneer who is responsible for revolutionizing the ways scientists use NMR spectroscopy to characterize materials.

"Collaboration is essential in solving problems," said Wasylishen, who was recently honoured with a 2013 J. Gordin Kaplan Award for Excellence in Research. «If everyone just works on their own and never tries to utilize all of the techniques and tricks available, their research won't have the impact that it otherwise would."

Wasylishen's willingness to share his research techniques also influences his teaching. Of the many researchers he has trained, two have been awarded Natural Sciences and Engineering Research Council Doctoral Prizes, of which only four are given out across Canada per year, nine hold academic positions and five are facility managers at Canadian universities.

"For me, that is what the fun is—interacting with students and trying to understand materials better, understand the universe better," he said. "A lot of students are not willing to dig in their heels and pursue this kind of research, but the ones who have are fortunate and happy that they did. It is a very interesting area to work in."

Similar to an MRI, which allows physicians to observe the structure of the organs inside the body, NMR gives researchers the ability to determine the structure of molecules whose size is a billion times smaller.

Kaplan

Traditionally, researchers use NMR spectroscopy to study the hydrogen and carbon nuclei in molecules in liquids. However, Wasylishen, a leader of the U of A's Solid-State NMR Group and a Canada Research Chair in Physical Chemistry, has helped devise ways of applying NMR techniques to characterize "everything under the sun."

Jonathan Schaeffer, dean of the Faculty of Science, who wrote in support of Wasylishen's Kaplan nomination, said Wasylishen's innovative application of NMR techniques to image and monitor water in hydrogen fuel cells is a significant breakthrough in understanding how to optimize fuel-cell efficiency, and brings the fuel-cell industry one step closer to replacing fossil-fuel-powered engines.

"Wasylishen is influential and has significantly impacted how others conduct science and forced entire disciplines to fundamentally rethink basic theory and long-held assumptions," he wrote.

Schaeffer added attracting Wasylishen 12 years ago was a major coup, and his impact on the U of A has been dramatic and immediate.

"When he arrived in this department, its sub-discipline of physical chemistry was in desperate need of leadership and was attracting very few graduate students. He has provided the necessary leadership that over the first few years has re-established this group as a research force nationally and internationally."

Wasylishen, who adds the Kaplan award to an already crowded showcase that includes, among others, being named a fellow of the American Association for the Advancement of Science and receiving a 2007 Killam Annual Professorship Award, says none of it would have been possible without the support of the full spectrum of the university's research community.

"The University of Alberta has provided me an exceptional environment to carry out my research, for which I am extremely grateful," said Wasylishen, who, besides crediting colleagues and student researchers, singled out the work done by the chemistry department's support staff.

"I worked with (chemistry professor) Steve Bergens on the fuel-cell project, and to build a fuel cell to fit in our NMR probe would just not have been possible where I've been before," he said. "If you don't have this kind of support for your basic research, you end up doing more routine things rather than the really innovative stuff. It's part of the reason we like to think we are among the top three chemistry departments in the country." ■

Attraction part of NMR appeal

Michael Brown

For many people, wanting to work at the University of Alberta has an almost magnetic quality. For a few, working at the university is literally all about magnets.

In departments across the campus, you will find nuclear magnetic resonance labs, but none in

such concentration as the 11 nuclear magnetic resonance spectrometers found in eight chemistry labs over four floors of the Chemistry Centre.

"My day is never the same," said Mark Miskolzie, who works along with Nupur Dabral as one of the Department of Chemistry's two NMR technicians. "It's such a big facility, there is always something happening. There is many a day that I come in, I haven't even sat down and I'm either helping a user or troubleshooting an instrument."

NMR is a characterization technique that uses the magnetic properties of certain atomic nuclei to determine the physical and chemical properties of molecules.



Mark Miskolzie and Nupur Dabral

Miskolzie and Dabral spend their days servicing the spectrometers and running experiments on these big magnets, which are tens of thousands of times stronger than the Earth's magnetic field.

Caring for the spectrometers involves keeping them topped up with various cryogens, making sure the magnets are clear of ice, and custom-coding the manufacturer's NMR software to make it accessible for the 200-plus users.

"The experiments we run can be anything from special techniques to variable temperature studies," said Miskolzie. "Recently we had a request come in from a user to run an experiment at -80 °C."

Miskolzie, who has been at the university continuously since his undergraduate days began in 1993, says he and Dabral have many roles—from spectroscopists to IT

and electronics specialists and "even guidance counsellors sometimes." "It is an academic setting, so there is always something interesting and topical that comes down the pipe," he said. "We're also a teaching facility, so there are always students who have questions and that sort of thing. There is always something of interest."

We've got users who have never seen the instrument, and we've got true spectroscopists. We don't need to do much to help them, but for the uninitiated we try to make it as easy as possible for them, so that they can come here, we give them one or two hours of introduction and they can start to become productive, they can start doing their research.

Dabral has been working in the chemistry department for six years after leaving her native India and spending time in the private sector.

"I like catering to students and troubleshooting their problems," said Dabral, who also serves on the department's social committee. "It's been a great experience being on campus, learning new things as well as meeting new people." ■

Researchers create new wheat types

Michel Proulx

Prairie farmers will have new wheat options in the coming years as two new varieties, successfully developed by the University of Alberta's wheat breeding program, were recently approved by the federally regulated Prairie Grain Development Committee.

Dean Spaner, a researcher in the Department of Agricultural, Food and Nutritional Science, and his research group developed BW947 and PT765, two high-yielding Canada Western Red Spring (CWRS) wheat lines with good resistance to stripe rust, a serious new disease affecting wheat crops in Western Canada, especially Alberta. PT765 also has improved resistance to Fusarium head blight, a disease of consequence for animal and human health in the harvested grain. Both lines mature early, a significant characteristic for wheat growing in Alberta, especially north of Red Deer where the growing season is shorter.

"We only have 99 days in our growing season in Alberta. Early maturity means you can harvest faster, and you have less downgrading of the crop, less frost damage and less pre-harvest sprouting," Spaner explains.

CWRS is one of the highest-quality types of wheat in the world because of its high protein content, the size of its kernel and the ability of its dough to rise. It is often used to supplement lower-quality grains of wheat in industrial purposes. To be approved for registration, CWRS wheat must pass extremely stringent bread-making quality tests over a number of years.

The registration of the two new lines is a breakthrough for the U of A's wheat breeding program. The two lines are the first developed in Alberta and approved for release since 1997, when U of A wheat breeder Keith Briggs developed Alikat. Previously, the U of A had developed and released three varieties since the agriculture faculty's inception in 1915.

Canada has one of the world's most stringent regulatory systems when it comes



Dean Spaner (foreground) and members of his research group harvest wheat on South Campus last summer.

to releasing wheat varieties. It takes between eight and 12 years to develop a wheat cultivar. It must be field tested in roughly 50 environments over five years and tested for many agronomic traits, including yield and maturity, as well as disease resistance and quality traits.

With funding from the Alberta Crop Industry Development Fund and the Western

Grains Research Foundation as supported by the wheat producers of Western Canada, Spaner and his team developed the varieties between 2004 and 2007 and field-tested them in 52 environments between 2007 and 2012.

The lines are in the process of being commercialized and will likely be made available to prairie farmers in two to three years. ■

Mussel's stick-to-it-iveness inspires discovery

Brian Murphy

The ability of mussels to cling to just about everything in their underwater world has yielded more important findings for a University of Alberta researcher.

Chemical and materials engineering researcher Hongbo Zeng says academic freedom at the U of A and the university's encouragement of innovation, sustainability and creativity helped his research team make its important findings.

Two years ago, Zeng discovered that a wet adhesion mechanism that lets mussels attach themselves to even slippery surfaces could lead to development of new products. Those products range from a naturally biodegradable glue for patching up cuts and scrapes on people to an industrial superglue that works in salt water.



The mussel's ability to cling to almost anything could have applications in health care and the energy industry.

Now Zeng and his U of A research team are the first to directly measure the molecular force and energy required for another

interaction mechanism that gives mussels their clinging power. Zeng also says the adhering mechanism in mussels, referred to as the Cation-pi interaction, is shared with many other living things—and even non-biological systems as unlikely as Alberta's oilsands.

Zeng explains how a relatively simple living thing like a mussel shares common chemistry with bitumen, sand and water.

"When the tarsands are heated to separate the oil from sands in water, we now have a better understanding of how and why oil molecules can remain stuck to particles of sand in a complex water environment," said Hongbo. "Understanding and measuring the mechanism of how and why some sand particles remain stuck to oil molecules could help for a more efficient cleanup of water used in the oilsands production process."

In biological systems like the human body, Zeng's nano-level measurement of the bonding process between molecules tells us more about transport of salt into cells, and the effect of nicotine on the brain.

"Nicotine molecules bond to certain brain receptors, and understanding the interaction energy required could lead to developing pharmaceutical methods of preventing the undesirable effect of nicotine on the brain," said Zeng.

The researchers say a more thorough understanding of these molecular bonding processes could allow for the development of new, faster-acting pharmaceuticals.

"Our research could be useful for pharmaceuticals such as cancer drugs," said Zeng. "Drugs designed to target specific cells could be designed for faster, more lasting bonds with cancer cells, and that would increase the efficiency of the patient's treatment."

Zeng's research paper was published Feb. 28 in the journal *Angewandte Chemie*. Qingye Lu, a post-doctoral fellow in Zeng's lab, is the first author of the paper. The publishers were so impressed by the research it was classified as a "hot paper," a designation the journal's editors reserve for the most important papers of high current interest in their field.

Sprint to the finish



Debby Trang, second-year physical education and recreation student, runs in the 4x200-metre relay in which the U of A finished fourth and set a new Pandas record at the 2012-13 CIS track and field championships in Edmonton March 7-9.




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Program designed to help police better serve people with mental illness

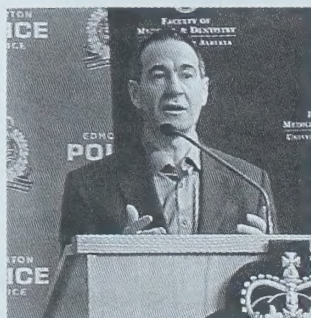
Raquel Maurier

Researchers with the Faculty of Medicine & Dentistry designed a one-day training program for the Edmonton Police Service that resulted in officers being more likely to quickly identify mental health issues during a call, and less likely to use physical force or a weapon in those situations.

Peter Silverstone, a professor in the Department of Psychiatry and the study's principal investigator, says the main thrust of the training was to improve an officer's empathy, communication skills and ability to de-escalate a tough situation.

The training involved actors role-playing six realistic scenarios with police officers. Sometimes the mental health issue was easily discernible, but in other scenarios the issue was masked or could be misconstrued as a drug addiction.

After the training scenarios, officers received feedback from the actor involved and from another actor who observed the interactions. The training program encouraged police behaviour such as verbally



Peter Silverstone discusses the police training program he designed with a team of researchers.

expressing empathy, maintaining eye contact, using non-threatening body language, "mirroring" the actor's movements and sharing non-threatening information.

In the end, Silverstone was able to measure a 40 per cent increase in officers' abilities to recognize mental health issues as the reason for a call, a decrease in the use of physical force or weapons when officers interacted with people who were mentally ill, and more efficiency when officers dealt with calls involving mental health issues.

"I think what worked with the training program is that we managed to engage officers at a strong emotional level, not just an intellectual level," says Silverstone. "I think that's why it carried through to the work they do on a day-to-day basis. And that's why the behavioural change was long-lasting."

Silverstone says it can be hard to differentiate between mania or psychosis and a drug-induced problem. "What we wanted to get across to officers is to not make assumptions right away," he said. "There may be underlying mental health issues that may not be immediately obvious or that may mimic drug- or alcohol-related symptoms."

Silverstone says that with many unfortunate interactions between police forces and people with mental illnesses, the goal "is to try and stop these tragedies from occurring in the first place." The paper, published in *Frontiers in Psychiatry*, noted that studies in Canada and the U.K. have shown that 37 to 48 per cent of people fatally shot by police had underlying mental health issues. Silverstone adds that better

training is warranted because it is increasingly common for police to be first responders in calls involving those who are mentally ill.

The training program designed by Silverstone and his team cost \$120 per officer and resulted in long-term savings of an estimated \$80,000 because subsequent calls were dealt with more efficiently.

Silverstone's team is working with the Edmonton Police Service

on a second phase of research, to expand the study to include a larger cohort of officers and to interview a broader range of people who are directly affected by the police. The first phase involved 663 officers.

The study was funded in part by the Centre for Effective Business Management of Addiction Treatment at the Alberta School of Business, as well as the Edmonton Police Service. ■

A new role for cellular gateway

Raquel Maurier

University of Alberta medical researchers and their American colleagues have discovered that the "gateway" known to control the movement of molecules in and out of a cell's nucleus appears to play another critically important role—a role no one had noticed until now.

These "gateways" have a second key job in a cell—the ability to control the structure of chromosomes and the DNA linked to those chromosomes. This affects what genes produce or express. The discovery gives scientists a new way to investigate the triggers for various kinds of disease, says Richard Wozniak, the principal investigator with the U of A's Faculty of Medicine & Dentistry, who worked on the discovery with collaborators from the Institute for Systems Biology in Seattle, Wash.

"This discovery may explain links between disease and defects in these gateways," he says.

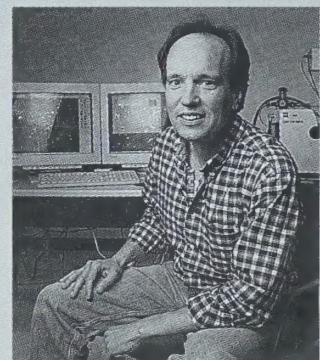
"Our studies provide new insights into how the nucleus is organized and how the genetic material it houses is used, including important information about the jobs genes do. When cells have to adapt to their environment, they need to change their gene expressions pattern. If this isn't done right, diseases such as cancer or heart disease occur. Our work also provides insight into why many viral infections target this gateway for their survival."

The research team's discovery was recently published in the peer-reviewed journal, *Cell*.

Wozniak and his team are continuing their research in this area. They want to learn more about this new mechanism when it functions properly, and what causes it to malfunction. Uncovering the key players in this new mechanism is also key, he says.

"We want to understand how these gateways are functioning at a molecular level—what makes them capable of altering the structure of chromosomes and making other key changes? That is our next step," says Wozniak, who is a researcher with the Department of Cell Biology.

The Canadian Institutes of Health Research, the Howard Hughes Medical Institute, and Alberta Innovates – Health Solutions provided funding for the team's work. ■



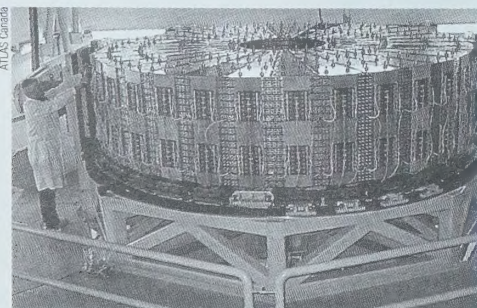
Richard Wozniak led a team of researchers that discovered a critical role for the "gateway" that controls how molecules move in and out of a cell's nucleus.

Physicists' expertise helps unearth the universe's DNA

Folio Staff

The discovery of the Higgs boson last July has been called the discovery of the century, and this week scientists came even closer to confirming its existence, with help from University of Alberta physicists.

"The Higgs boson is a fundamental piece of the DNA of the universe. Its discovery is the first giant step in answering the profound question, how is there something rather than nothing?" says James Pinfold, one of the U of A scientists who have made the discovery possible.



This hadronic endcap calorimeter is one of two standing at each end of the ATLAS particle physics detector. The stacked copper plates used to assemble the massive devices were machined at the U of A.

The elusive particle has been the focus of an unprecedented international scientific quest to understand where we come from. Physicists at the U of A have played a key role in this discovery by providing their deep scientific expertise in the creation and evolution of the ATLAS collider at CERN.

Roger Moore, who along with fellow physicists Pinfold and Doug Gingrich, works on the ATLAS collaboration, played a role on the ATLAS trigger, the system that decides when an interesting event has occurred in the detector and saves it to disk for later analysis.

He says since last July, when researchers first revealed that they had found a new subatomic particle that could be the long-sought Higgs boson, evidence has surfaced that what they have unearthed is considered the building block of the universe.

"We have a measurement of the spin of the particle that shows it is consistent with a particle with zero spin—which is really the crucial thing in determining that it is a Higgs boson. This makes it fundamentally different from every other particle discovered because all other particles have some spin. Particles with half a unit of spin give us matter; particles with one unit of spin give us force, like electromagnetism. Particles with zero spin give us mass."

With 3,000 scientists from more than 30 countries offering contributions to the cause, the search for the Higgs represents one of the most intensive international scientific collaborations yet—a clear indication that this kind of collaborative spirit is the way for discoveries of the future as well.

"Being part of such important international research is critical to both fundamental and applied research because we can't apply science that we don't understand," noted Mauricio Sacchi, chair of the Department of Physics. "Understanding the basic nature of how the universe works is at the heart of the next chapter in scientific research, and ATLAS will now turn to helping establish what type of Higgs boson has been found."

The support of the university and the provincial government is crucial to this kind of success, said Sacchi. "This commitment to research will continue to attract a high calibre of faculty and graduate students to the University of Alberta to help answer the world's big questions."

Moore says that with more revelations likely to come from further research, some of those big questions may not have been asked yet.

"Having now found the Higgs, there is a very real possibility that there is new physics just around the corner and we do not have a clear idea exactly what it is." ■

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Glen Sather clinic turns 25 in new home

Bryan Alary

A quarter century after first opening its doors, the University of Alberta's Glen Sather Sports Medicine Clinic has a new home to advance patient care, teaching and research.

Now operating inside the newly opened Kaye Edmonton Clinic, the Glen Sather clinic has three times the space and a refreshed mandate to serve as an interdisciplinary centre of excellence in the diagnosis, treatment and rehabilitation of musculoskeletal, sport- and exercise-related injuries.

"When it first opened, the Glen Sather clinic pioneered the concept of multidisciplinary patient care in a way that revolutionized sports medicine, not only in Alberta, but nationwide," said Bob Haennel, acting dean of the Faculty of Rehabilitation Medicine, which operates the clinic in partnership with the faculties of physical education and recreation, and medicine and dentistry.

"This new location gives us far more space and flexibility to advance that mission and serve as a hub of interdisciplinary excellence. This isn't going to be defined by bricks and mortar—the Sather will be the focal point, but our services, teaching, learning and research will extend far beyond into other university facilities, into recreational areas and into the community."

The concept for the Glen Sather clinic dates back more than 30 years to a time when physicians,

physical therapists and trainers were more concerned about protecting their turf than co-operating, remembers founding director and orthopedic surgeon David Reid.

"When it first opened, the Glen Sather clinic pioneered the concept of multidisciplinary patient care in a way that revolutionized sports medicine, not only in Alberta, but nationwide."

Bob Haennel

In those days, the only clinic space was a room in the back of the men's locker room on campus, a fact that was particularly problematic once Reid started treating Pandas athletes in addition to Golden Bears.

"We used to put a towel over the ladies' heads to walk them through the locker room to get their treatment—obviously, that wasn't satisfactory," said Reid, now a professor emeritus in the faculties of rehab medicine and medicine and dentistry. "[Former U of A president] Myer Horowitz was being treated at one point and he saw this and said, 'What's going on? We've got to do better than that.'"

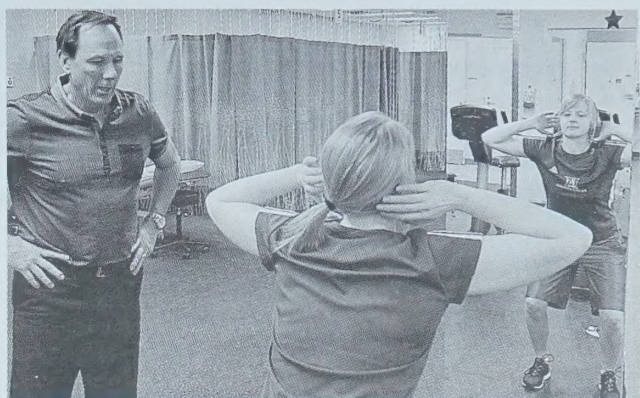
Things did get better when a clinic was created inside the Clare

Drake Arena; however, it was far from ideal. With fundraising help from the Edmonton Oilers and the Carnival of Champions—the precursor to the Edmonton Oilers Community Foundation—the Glen Sather Sports Medicine Clinic opened its doors in the fall of 1988, named after former Oilers president and general manager Glen Sather.

Kevin Lowe, current Oilers president of hockey operations, says he wouldn't have been able to play some nights during his NHL career if it weren't for the services of the Glen Sather clinic and outstanding physicians such as Reid and David Magee. Today, Oilers players have access to their own team facilities, but the link with Glen Sather is just as important as it was back then, he says.

"The Oilers and the Edmonton Oilers Community Foundation have really benefited over the decades through collaboration with the University of Alberta," Lowe said, before unveiling a new mural in the clinic donated by the foundation. "We are so fortunate to have the University of Alberta in our city and a world-class facility like the Glen Sather clinic."

The clinic has become a second home for Jaime Norum, a third-year psychology student and member of the Pandas basketball team. Norum was eight games into the basketball season in her freshman year when she tore her anterior cruciate ligament, an injury that required reconstructive surgery.



Physical therapist Ian Hallworth works with Jaime Norum at the newly relocated and expanded Glen Sather Sports Medicine Clinic.

Three surgeries later, Norum is again rehabilitating with an eye to returning to the basketball court.

"I'm almost nine months post-surgery. I'm able to do a ton of stuff—cutting, shooting drills with the team," said Norum, who says she'd be in a far different place without the Glen Sather and expertise from orthopedic surgeons David Otto and Reid, sports medicine physician Seana Minnett and physical therapist Ian Hallworth. "I would not be where I am at all today without the Glen Sather clinic."

The new facility builds on its early foundations with a team of physicians, surgeons, physical therapists, orthotists and massage therapists. It also features a 3-D gait analysis system that's the first of its kind in Edmonton to identify and treat walking, running and other musculoskeletal injuries.

The move to a new home coincided with a review of the Glen Sather clinic model and efforts to

enhance teaching and research. The clinic has its first-ever academic director in Magee and a new education co-ordinator, both of whom are helping shape the Glen Sather into a beta site for teaching innovation across disciplines, Haennel said.

Through the work of faculty members such as Lauren Beaupre, Judy Chepeha and Linda Woodhouse, the David Magee Endowed Chair in Musculoskeletal Clinical Research, the Sather clinic will also serve as a research hub, leading to new treatments and improved health care for all Albertans, he added.

"This is an opportunity to take research from the lab and put it into a clinical environment—the next step back to everyday life for the patient. We will be able to see how well the therapies and interventions developed here apply to populations and can be rolled out into the broader community."

Majority of Albertans support assisted suicide: study

Bryan Alary

An overwhelming majority of Albertans believe dying adults should have the right to request to end their life, according to University of Alberta research.

Donna Wilson, Caritas Nurse Scientist in the Faculty of Nursing, led the team that studied the views of 1,203 Albertans on assisted suicide, currently illegal in Canada. A majority—77.4 per cent—felt dying adults should have the right to end their life early.

"Increasingly, there are countries or states where they are allowing assisted suicide or euthanasia. Like many of those countries, Canada will have to grapple with this question," said Wilson. "Until this point, nobody has asked the public, and that's a very important perspective."

Wilson, an expert in aging and end-of-life care, used data gathered in a 2010 health-care survey by the U of A's Population Research Laboratory. When asked, "Should dying adults be able to request and get help from others to end their life early?" a total of 36.8 per cent of respondents answered yes outright.

Another 40.6 per cent of respondents indicated yes, but with the qualification that assisted suicide "should only be allowed in certain cases or situations." The remaining 22.6 per cent answered no.

The results showing support buck the province's reputation as a society holding conservative views.



Donna Wilson led a team that found 77 per cent of Albertans felt that dying adults should have the right to end their life early.

"You have these preconceived images of Albertans, but Alberta is a very young province—the youngest in Canada—and we really value autonomy and independence," she said. "A lot of people realize that, 'If I were dying, I'd want to be able to say, look, end it now. I might not want it in the end, but it would be nice to have that option.'"

The survey data show personal experience helps shape opinions on assisted suicide. Individuals who have been involved in a decision to stop or not start life-supporting treatment were 79.8 per cent in support. Even greater support—81 per cent—was observed among those who have euthanized a pet.

"It's not just some abstract answer that 'this isn't right,'" Wilson said. "These are people with important experiences that made them much more open to assisted suicide."

Respondents who opposed assisted suicide were more likely to be less educated (39.8 per cent did not complete high school) and to have strong religious beliefs. Some 40 per cent of Protestants answered no, as did 35 per cent of Catholics and 44.3 per cent of those in the "other religions" category—a group that includes Christians, Muslims, Hindus and Jews.

Wilson's research comes at a time when the federal government is appealing the B.C. Supreme Court ruling to allow Gloria Taylor, who had late-stage ALS, a constitutional exemption to proceed with physician-assisted suicide. A Quebec panel has also called on that provincial government to allow "medical assistance to die."

Wilson said she is not calling for legal changes, but cautions that if laws are changed to allow assisted suicide, it will be paramount to learn from the experiences of other countries to satisfy concerns about safety, the impact on health professionals and fears of abuse of power.

"With 77 per cent of people saying it's OK to do it, it's not going to go away—Canada is going to keep talking about euthanasia," Wilson said, noting the number of deaths in Canada is expected to double over the next two or three decades, which could further influence support.

Wilson's research was funded by the Canadian Institutes of Health Research.

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news [shorts]

folio presents a sample of some of the stories that recently appeared on the ualberta.ca/news/page. To read more, go to www.news.ualberta.ca.

Awards for faculty excellence

The provost and vice-president (academic) invites nominations for the 2013 University Cup and Vargo Teaching Chair.

The University Cup is the highest honour the U of A can bestow on a member of its academic staff and is granted only to those individuals who have achieved outstanding distinction in each of the areas of scholarly research, teaching, and service to the university and the community at large.

Any full-time member of the academic teaching staff with 20 years of service as a faculty member in a university community and at least 10 years of service as a faculty member at the U of A may apply. Nominations may be submitted by current or past students, faculty members, deans or chairs.

Vargo Teaching Chairs have been created to foster excellence in teaching. This program is committed to supporting individuals demonstrating innovative and creative teaching methods that enhance learning by undergraduate and graduate students.

Any full-time associate professor or full professor may be appointed as a Vargo Chair. Submissions must be forwarded by a department or faculty and have the support of the dean of the faculty.

For complete regulations, go to policiesonline.ualberta.ca and search the particular award. The deadline to submit nominations is May 1 at 4 p.m. Nomination packages are to be submitted to the Academic Awards and Ceremonies Office, Office of the Registrar, 1-27 South Academic Building.

Arts considers new performance spaces downtown

The Faculty of Arts is considering the possibility of becoming a major tenant of the Edmonton Downtown Academic and Cultural Campus, a visionary proposal by a group led by local philanthropists Irving and Dianne Kipnes.

Lesley Cormack, dean of arts, said the need for performing space has been felt within the faculty for at least as long as she has been dean. "I heard that drama students were rehearsing in bathrooms, that we're cramped for rehearsal and lecture space, that we need more space for design students."

Cormack emphasized that the project is still in its infancy, and the first steps toward making the "campus" a reality are just now being taken. The city must first agree to support this project, and the Kipneses now have to create a business plan to present to council near the end of April. The Faculty of Arts also needs to work with the university to create a business plan for the provincial government, especially in light of the provincial budget. "We must think creatively about how to meet this need as public funding becomes less readily available," she said.

Researcher named to nuclear safety commission

Sandy McEwan, a professor and chair of the Department of Oncology at the U of A, has been appointed to the Canadian Nuclear Safety Commission as a permanent member.

The government body, whose mandate includes the regulation of the development, production and use of nuclear energy in Canada, currently consists of six permanent members and three temporary members. McEwan is the second medical doctor and only member from Western Canada on the permanent commission.

McEwan, a leading expert in nuclear medicine and medical isotopes, has more than 25 years of experience in the field of nuclear medicine. He also served as a special advisor to former health minister Leona Aglukkaq in 2008.

"I am pleased to be able to contribute to the important work the commission does to ensure the health and safety of Canadians," he said. "I think it is a great reflection as well on the University of Alberta and the long history of excellence at the university in this area."

Carbon policy makers should look at income disparity

In a new study that looked at the different sources of greenhouse gas emissions from consumers based on their income levels, environmental sociologist Emily Huddart-Kennedy says the wealthiest households in Alberta emit the most greenhouse gases.

"In the wealthiest income quintile, 26 per cent of emissions come from air travel, which is something you can control. In the lowest income quintile, air travel only accounts for five per cent," said Huddart-Kennedy.

Huddart-Kennedy and her co-authors, Harvey Krahn and Naomi Krogman, found that households with the highest incomes emit 17.9 tonnes of greenhouse gases per year while those with the lowest incomes emit 8.2 tonnes per year.

The study concluded that not taking into account income disparity has led to the creation of policies that produce a disproportionate financial burden on people who can least afford it and who have contributed the least to the problem, she said.

"The solution is Alberta would be to push renewables, create incentives to build smaller homes and create disincentives to build low-density, auto-dependent suburbs," said Huddart-Kennedy. "Municipal governments can think about things like higher vehicle taxes for larger and multiple vehicles, and programs to reduce air travel."

Aboriginal youth get taste of university life

Bev Betkowski

Leaving the tight-knit world of high school for a large campus teeming with strangers can be scary for a new student.

That's why each spring, First Nations, Inuit and Métis high school students from across Alberta are welcomed onto the University of Alberta campus for Aboriginal Student Discovery Day, which happened this year on March 15. Packed with events ranging from Lister residence tours to a booth fair, the day is aimed at helping wide-eyed high schoolers feel more at ease taking the next step into the world of higher education.

"We want to give them the experience of finding out what post-secondary education is all about."

Freda Cardinal

"We want to give them the experience of finding out what post-secondary education is all about," said Freda Cardinal, Aboriginal student recruitment co-ordinator for the U of A.

During their whirlwind day on campus, about 60 students from Aboriginal communities are treated to a formal welcome and opening prayer given by an elder, campus tours and a choice of class sessions ranging this year from time spent



About 60 Aboriginal high school students were welcomed onto the U of A campus March 15 for the annual Aboriginal Student Discovery Day.

with U of A indigenous artist-in-residence Jordan Bennett, to a Faculty of Native Studies seminar comparing historical fact versus Hollywood fiction about General George Custer. Other sessions explore career options in the Faculty of Nursing, look at water quality issues through Engineers Without Borders, and introduce "Tips on TYP," the U of A's Transition Year Program for Aboriginal students.

"The students get to see the opportunities that a U of A education provides, and it gives them a feel for what a university is. Post-secondary is such a big and scary world. Bringing the kids to campus and giving them a taste of real-life experience takes that fear away."

Compliments of U of A Residence Services, the students also receive a ONEcard for the day, which they use to eat lunch in the Lister cafeteria, before trooping off to a booth fair that shows the nuts

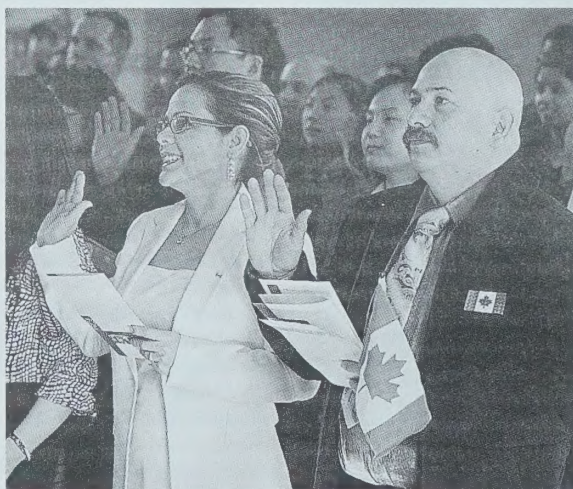
and bolts of university life. There, several faculties share information on their programs, along with the Aboriginal Student Services Centre and other student support groups.

"It is important to give the students time to find out about the campus programs and resources available to them, as well as the things that are part of being a U of A student, like admissions, support services and student life," Cardinal said.

The day ends with a panel discussion, in which current Aboriginal students share their U of A experiences with the young visitors and answer questions, then a closing prayer and a celebratory round dance.

Cardinal hopes students leave campus with new confidence and a hunger to return after high school graduation. "We've given them a connection to the University of Alberta community that we hope endures." ■

Proud Canadians



About 70 people from around the world pledged to become Canadian citizens during a ceremony March 11 at Convocation Hall. The new Canadians also took part in roundtable discussions about challenges new immigrants face when coming to Canada.

laurels

Thomas Thundat, professor in the Department of Chemical and Materials Engineering, received the 2013 Distinguished Alumni Award from the University at Albany, State University of New York, in recognition of his outstanding work, particularly in oilsands molecular engineering.

George Pemberton, professor in the Department of Earth and Atmospheric Sciences, received the Logan Medal from the Geological Association of Canada for his sustained distinguished achievement in Canadian Earth science.

Duane Froese, researcher in the Department of Earth and Atmospheric Sciences, received the Hutchison Medal from the Geological Association of Canada for his exceptional advances in Canadian Earth science research.

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Med students answer province's call for more family doctors

Raquel Maurier

The Faculty of Medicine & Dentistry has some good news for Albertans who don't have family doctors.

Of the 181 medical students graduating in 2013, a record 41 per cent have chosen to become family physicians and have been accepted into a family medicine residency program. In 2003, only 16.5 per cent of U of A medical students chose family medicine as their profession. Alberta is experiencing a shortage of family doctors.

Lee Green, chair of the Department of Family Medicine at the U of A, said several factors led to this "huge increase." Chief among them is the family medicine Academic Alternative Relationship Plan (AARP) established in 2005, which allows academic family doctors to be compensated for teaching as opposed to relying solely on billing for their income.

"The AARP has been critical for this growth and the increasing success of the family medicine residency program," says Green. "By funding the faculty to do more

teaching, it has allowed us to teach more residents and expand the program to the point where we can provide more family doctors. It's freed the faculty to focus on education and on teaching well—and this in turn has made the program better and more attractive to potential residents."

This week, graduating medical students learned whether they have been accepted to the residency area of their choice through a nationwide match program.

Dawn Poisson, another graduating medical student who has chosen to be a family doctor in Red Deer, added, "I like the variety. I can do a little bit of everything. I also really enjoy rural life, having grown up in Newfoundland. I am fortunate to be able to practise medicine and be in a place that I want to be, outside the city. The fact I can do both—be a family doctor and live in a rural community—is phenomenal. Through medical school I had lots of exposure to family medicine through the ICC [Integrated Community Clerkship] program and being part of the PNME [Preclinical Networked Medical Education] pilot."

The Integrated Community Clerkship program, implemented in 2007, places third-year medical students in rural communities to work with family doctors for 41 weeks. Of the 20 students from the class of 2013 who participated in this program, 14 chose family medicine as a career. The Preclinical Networked Medical Education program allows second-year students to experience a rural medicine setting. Green credits the community preceptors in these programs for their tremendous work. "These doctors take medical students and show them what it's like to be a family physician, that it's an exciting way to spend your professional career. The preceptors have a very strong commitment to education."

The medical class of 2013 is larger than most years because of a one-time increase in funding from the provincial government in 2008-09 that allowed Alberta medical schools to accept more students in order to produce more physicians to serve the growing population.

"This is wonderful because it brings more family physicians to Alberta," said Green.



Dawn Poisson is one of the record number of U of A med students graduating this year who are choosing careers in family medicine.

"We filled the match in the first round and this shows that we're not only getting more, we're also getting better family physicians. Our top talent from medical school is going into family medicine. This not only gives us lots of family physicians, it gives us very good family physicians." ■

talks & events

Talks & Events listings do not accept submissions via fax, mail, email or phone. Please enter events you'd like to appear in folio and at www.news.ualberta.ca/events. A more comprehensive list of events is available online at www.events.ualberta.ca. Deadline: noon one week prior to publication. Entries will be edited for style and length.

MARCH 18-28

Traces Engineering exhibit. This second annual art exhibit showcases the artistic endeavours of engineering students, faculty and professionals. Gallery-style exhibit spans NREF and the ETL-ECERF atrium.

UNTIL MAY 1

Call for Nominations: University Cup and Vargo Teaching Chair. Detailed criteria for these awards can be found at policiesonline.ualberta.ca. Nominations due 4 p.m. May 1 at 1-27 South Academic Building. For more information contact Laura at laura.connell@ualberta.ca.

UNTIL MARCH 28

Les Cordes a linge de poesie. The Faculté Saint-Jean library is aiming at gathering French poems on its poetry clotheslines. Compose a poem or choose your favourite one and hang it on a clothesline. Bibliothèque Saint-Jean.

UNTIL MARCH 27

Exhibit – Révélations! Directed by the Albertan artist Doris Charest, Révélations! is an exhibit of more than 50 artworks by 15 students new to creative practice, who are discovering different media. Bibliothèque Saint-Jean.

UNTIL MAY 31

Miriam Green Ellis, Champion of the West. This exhibition introduces the work of a pioneer woman journalist of Western Canada, Miriam Green Ellis (1879-1964). Sampling the rich diversity of the collection (published newspaper articles, photographs, coloured glass slides, manuscripts, diaries, and letters) she bequeathed to the University of Alberta, the exhibition invites you to see the way we were as Westerners almost a century ago. Bruce Peel Special Collections Library (Rutherford South).

MARCH 23

Augustana Student Grant Art Exhibition. Augustana students applying for visual art scholarships present their work in a student exhibition. 9 a.m.–4 p.m. Augustana Auxiliary Building Visual Art Studio, Camrose.

Augustana Winter Drama Production. Shoot *Get Treasure* Repeat is an epic cycle of short plays written by Mark Ravenhill and directed by Kevin Sutley. Tickets (available only at the door): \$15 (general admission); \$5 (students). 7:30–9:30 p.m. Augustana Theatre Centre.

The University of Alberta Mixed Chorus and Faculty of Education Handbell Ringers. This annual Spring Concert program, directed by Dr. Robert de Frece, is a fundraiser for the Augustana Choir's tour activities. Tickets (available only at the door): \$18 adults; \$14 students/seniors; \$45 family. 7:30–9 p.m. Augustana Chapel, Camrose.

MARCH 25, 27, 28

APRIL 2, 3, 4, 5

Centre for Teaching and Learning Programs. Moodle Training, TLS Concepts, Peer Assessment and Course Design. The Centre for Teaching and Learning hosts a number of hands-on sessions to introduce Moodle features and course development to instructors. For more information, go to ctl.ualberta.ca.

MARCH 25

Noon Music. Patricia Tao Piano Class Concert. Noon–1 p.m. Convocation Hall.

MARCH 26

Bridges Global Citizens Cafe Sessions. Come for these bi-weekly sessions where you'll have the opportunity to listen to Bridges volunteers speak on issues they are passionate about, learn about worldwide events, and become part of the discussion on a variety of intriguing topics. Noon–1 p.m. International Centre.

Represent! Your Personal Brand Matters. Discover how to represent yourself well in person and online with Lazina McKenzie (MBA '08) from LSquared Style, and software developer and entrepreneur Mack Male (BSc '07). 5–6:30 p.m. 217/219 TELUS Centre.

MARCH 27

Awakening Education: Mindfulness and Contemplative Pedagogies for a Just and Compassionate World. Claudia Eppert, associate professor in

the Department of Secondary Education, will give a talk on the relevance and possibilities of mindfulness and contemplative pedagogies in today's complex world. It introduces historical and philosophical underpinnings of mindfulness, and explores how and why contemplative pedagogies and practices have been gaining increasing prominence in contemporary North American educational settings. Noon–1 p.m. 122 Education South.

Caribbean Left: Diasporic Circulations. Carole Boyce Davies, professor of Africana Studies, English and Comparative Literature at Cornell University, author of *Black Women, Writing, and Identity: Migrations of the Subject* (1994) and the award-winning *Left of Karl Marx: The Political Life of Black Communist Claudia Jones* (2008), will examine the Caribbean Diaspora and its uneasy confrontations with racism, colonialism and empire. 3:30–5 p.m. L-3 Humanities Centre.

MARCH 27 & APRIL 6

Staging Diversity 2013 Artist-in-Residence Workshop Series. Artist-in-residence for Winter 2013 and MFA candidate Nikki Shafieullah is a theatre facilitator who has led arts-based community projects across Canada and internationally. Staging Diversity, a participatory, theatre-based research project, employs a variety of theatre-based methodologies to explore social location, with a focus on ancestral histories and cross-cultural myths, folk tales and legends. 6–8 p.m. 4-104 Education North.

MARCH 28–APRIL 6

U of A Studio Theatre's Saint Joan by George Bernard Shaw. The play Saint Joan is based on the life and trial of Joan of Arc. Directed by Micheline Chevrier, there are no villains in the piece. Crime, like disease, is not interesting: it is something to be done away with by general consent, and that is all [there is] about it. It is what men do at their best, with good intentions, and what normal men and women find that they must and will do in spite of their intentions that really concern us. Timms Centre for the Arts.

MARCH 27

Lesléa Newman's Visiting Lectureship in Human Rights. Newman is an activist and author of many celebrated and often challenged books advancing lesbian and gay rights. 7:30–9:30 p.m. 1-430 CCIS

MARCH 30

Easter Eggstravaganza. The Alumni Association invites alumni families to join us for our annual Easter egg hunt. With face painting, hot chocolate, entertainment and goodies, it promises to be an 'egg-cellent' time for the whole family. 12:30–3 p.m. Outside the CCIS Building. Advance registration is required.

APRIL 2

Paradigm Shifts And Revolutions In Contemporary Biology. Evelyn Fox, MacArthur 'Genius' Award winner and author of *The Century of the Gene* (2000) and *Making Sense of Life: Explaining Biological Development with Models, Metaphors and Machines*, will be on hand to give this lecture. 4–5:30 p.m. 1-017 ETL.

Vocal Jury Recital. Vocal Jury-Recital featuring Augustana students from the studio of Kathleen Corcoran, with Roger Admiral, piano. 7–8:30 p.m. Augustana Chapel, Camrose.

APRIL 3

Land Reclamation International Graduate School Lecture Series. Eric Higgs, a professor with the School of Environmental Studies at the University of Victoria, will be on hand to give a talk entitled *Reclamation, Restoration and the Emergence of Novel Ecosystems*. 3–5 p.m. Maple Leaf Room, Lister Conference Centre.

APRIL 4–JUNE 29

U of A Museums present SIZE MATTERS: Big Prints From Around the World. From miniature to monolithic, artists have been playing with scale for thousands of years. SIZE MATTERS features the work of contemporary print-makers—working in media as diverse as woodcuts and digital prints on fabric—from Canada, the U.S., Finland,

Japan and beyond, who all have one thing in common: they like to think big. Enterprise Square.

APRIL 5

2013 Hours of Service Volunteer Challenge. Faculty members, administrators, support staff, students, residents, fellows and alumni are challenged to volunteer one hour or more of their time to the organization of their choice. Our goal is to accumulate a total of 2,013 hours by April 27, 2013, the conclusion of International Volunteer Week. For more info go to Med100uofa.ca. 7:30–10 a.m. Katz Atrium.

Math and the Planet Earth Lecture. Andrea Bertozzi, professor at the University of California – Los Angeles, will be on hand to give a talk entitled *The Mathematics of Crime*. This lecture uses crime as a case study for using applied mathematical techniques in a social science application. It will review recent work on agent-based models, methods in linear and nonlinear partial differential equations, variational methods for inverse problems and statistical point process models. From an application standpoint we will look at problems in residential burglaries and gang crimes. 5–6 p.m. L2-190 CCIS.

APRIL 6

69th Annual Mixed Chorus Spring Concert. Join fellow alumni of the U of A Mixed Chorus at the 69th annual Spring Concert. The concert will feature the Mixed Chorus and the Faculty of Education Handbell Ringers. Tickets will be available through the Winspear Box Office. 8–10 p.m. Winspear Centre.

APRIL 7

Mozart: Grand Mass in C-minor. In a joyful collaboration, the U of A Augustana Choir, The Madrigal Singers, The Concert Choir, and the U of A Symphony Orchestra will perform one of Mozart's finest choral masterpieces, The Grand Mass in C-minor for soloists, chorus, and orchestra. Tickets available at the door. 8–10 p.m. Winspear Centre.

APRIL 8

Noon Music–Instrumental. Noon–1 p.m. Winspear Centre.



PRIDE

goes on parade



Photos

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Neither an unusually heavy mid-March snowfall nor -11 C temperatures put a damper on the jubilant mood during the University of Alberta's Pride Parade March 18, the kickoff to the U of A's first campus-wide Pride Week. It took half an hour for the hundred or so marchers to cover the route from the Students' Union Building, north along the quad then south to and through the Education Building and back to the parade's starting point. The U of A Pride Parade was in keeping with Pride events across North America celebrating lesbian, gay, bisexual and transgender communities.